RICH Status Report

TAC, May 1−3, 1997

Hideki Hamagaki

CNS, Tokyo

Who are working for RICH

24 participants:

Faculty/Staff (7), PostDocs (2), Engineers (6), Students (3), Support (6)

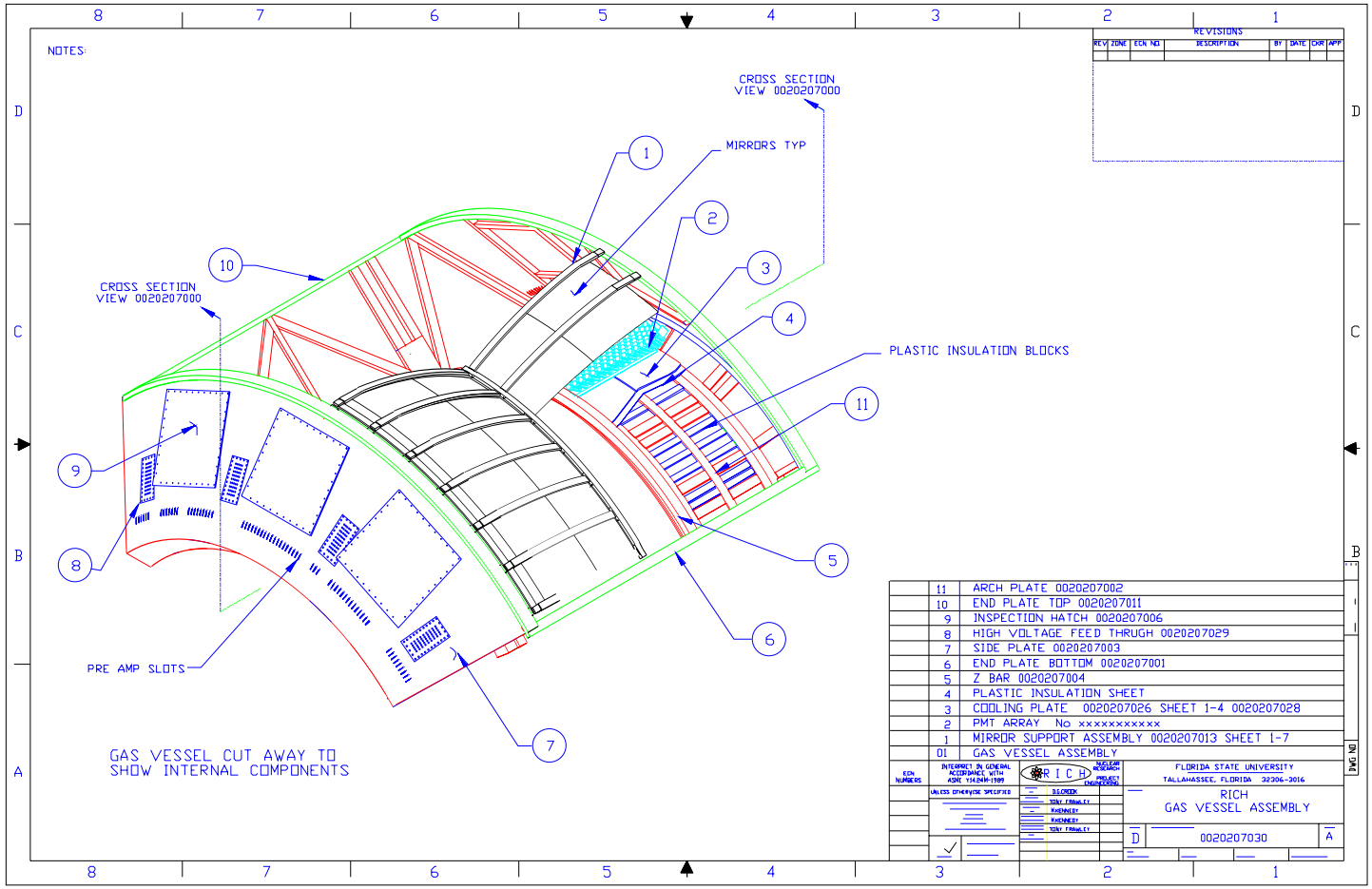
8 institutions:

BNL, CNS−Tokyo, FSU, KEK, ORNL, SUNY, U.Tokyo, Waseda

Responsibilities

System Manager (DC Member)	H. Hamagaki (CNS−Tokyo)
Mechanical Coordinating Physicist	A. Frawley (FSU)
Electronics Coordinating Physicist	H. Hamagaki (CNS−Tokyo)
Chief Mechanical Engineer	S. Wang (FSU)
Chief Electronics Engineer	A.L. Wintenberg (ORNL)
Production Factory Manager at FSU	A. Frawley (FSU)
Production Factory Manager at SUNY	T.K. Hemmick (SUNY SB)
Simulation Computing Coordinator	K. Shigaki (BNL)
Off−line Computing Coordinator	Y. Akiba (KEK)
On−line Computing Coordinator	Y. Akiba (KEK)
Testing Coordinator	T.K. Hemmick (SUNY SB)
Installation Coordinator	K. Shigaki (BNL)
Monitoring Coordinator	K. Shigaki (BNL)
Calibration Coordinator	S. Salomone (SUNY SB)

RICH Major Achievements in Last Year



Mechanical:

Final Design Review on April 23, 1997

Supermodule & mirror arrangement optimized

to minimize background from DC frames

PMT

purchased 3500 (out of 5120)
3000 tested at INS and shipped to BNL to SUNY
PMT information in database (by S. Salomone; SUNY)

Supermodule

Design −> review −> prototype −> parts fab.
−> assembled a few tens
assembled supermodules −> test −> long−term burn−in

Vessel

Final design (construction drawings) −> parts order
−> assembly

Mirror

Segments:

Design & prototype (reported in previous TAC)
Mass production starts RSN

Mirror support:

Design in the final stage −> production

RICH assembly at Bldg. 832

tent design
assembly procedure

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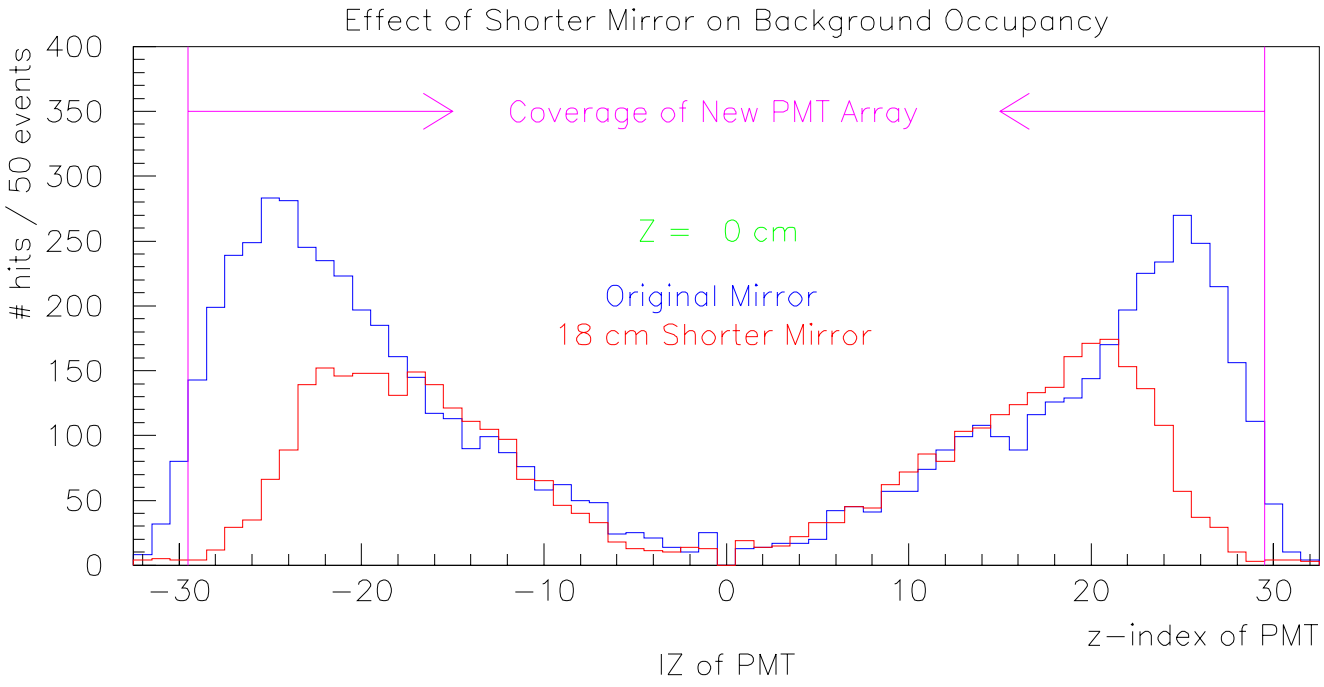
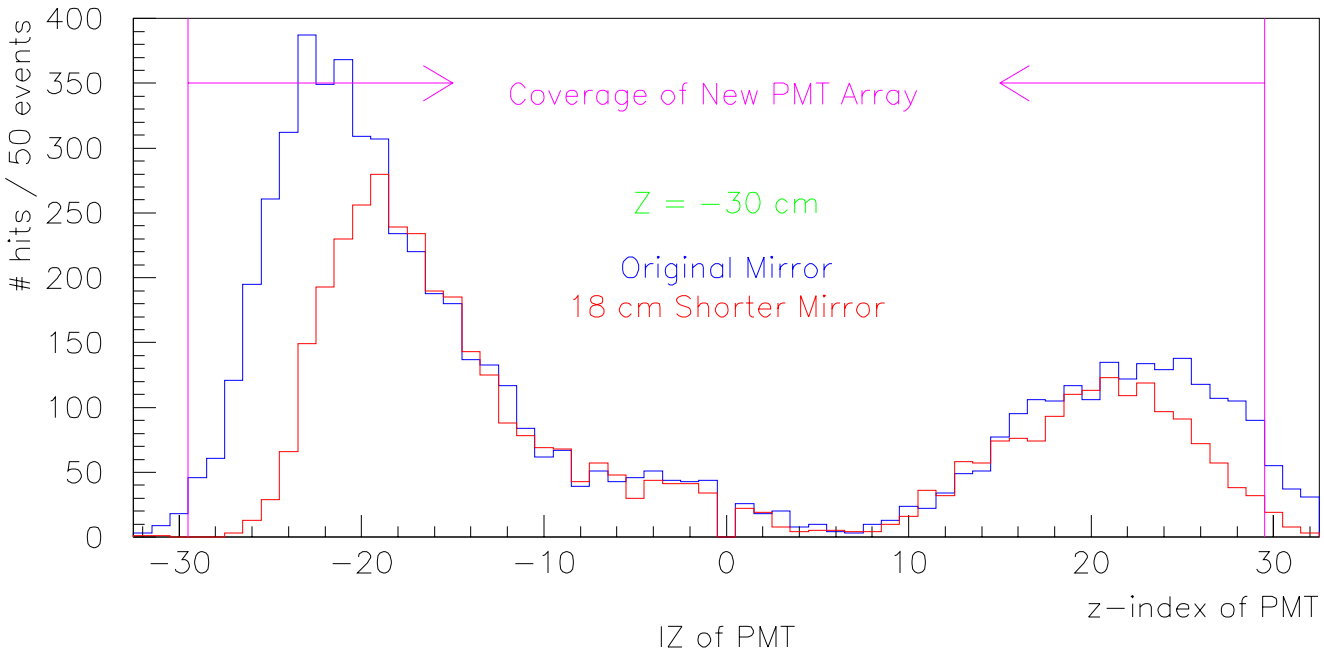
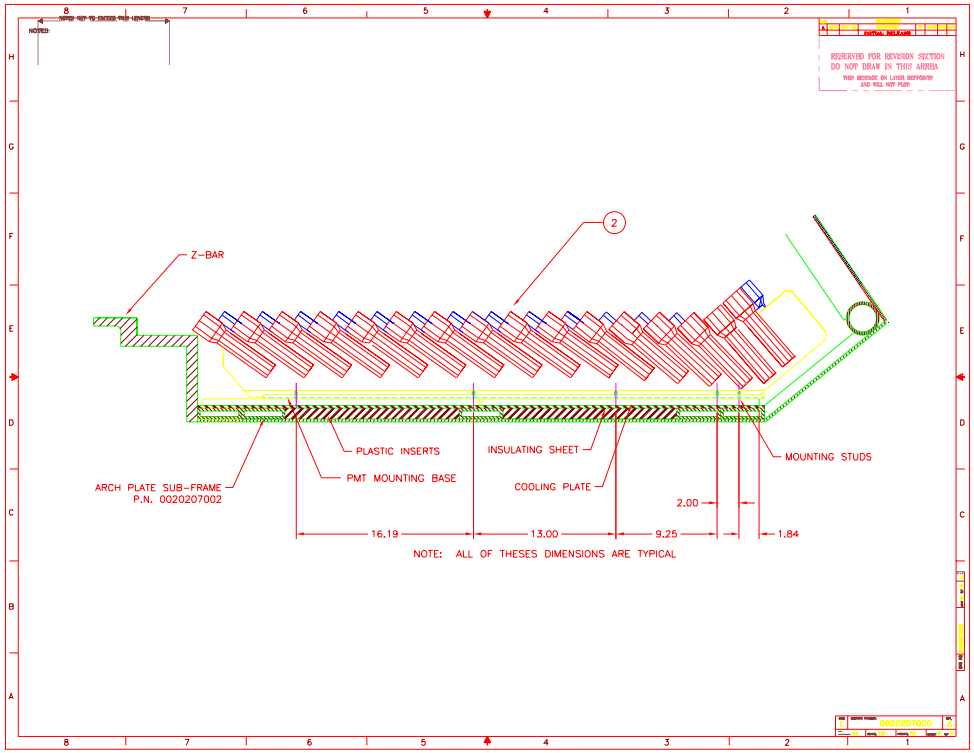
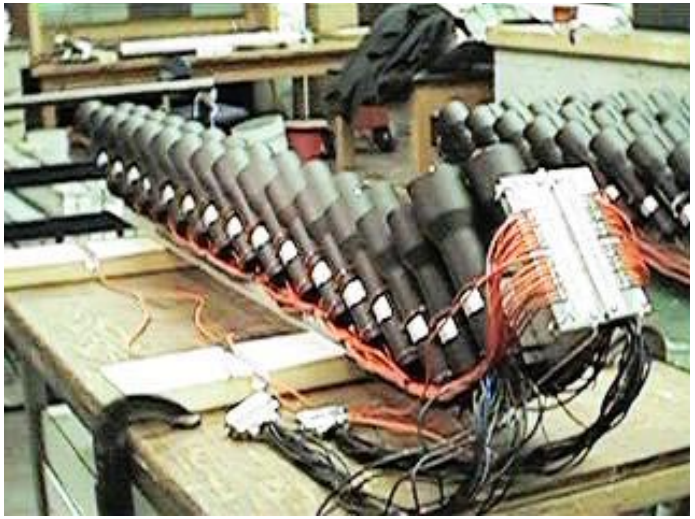

Effect of Shorter Mirror on Background Occupancy
hits / 50 events
Coverage of New PMT Array
Z = 0 cm
Original Mirror
18 cm Shorter Mirror
z−index of PMT
IZ of PMT

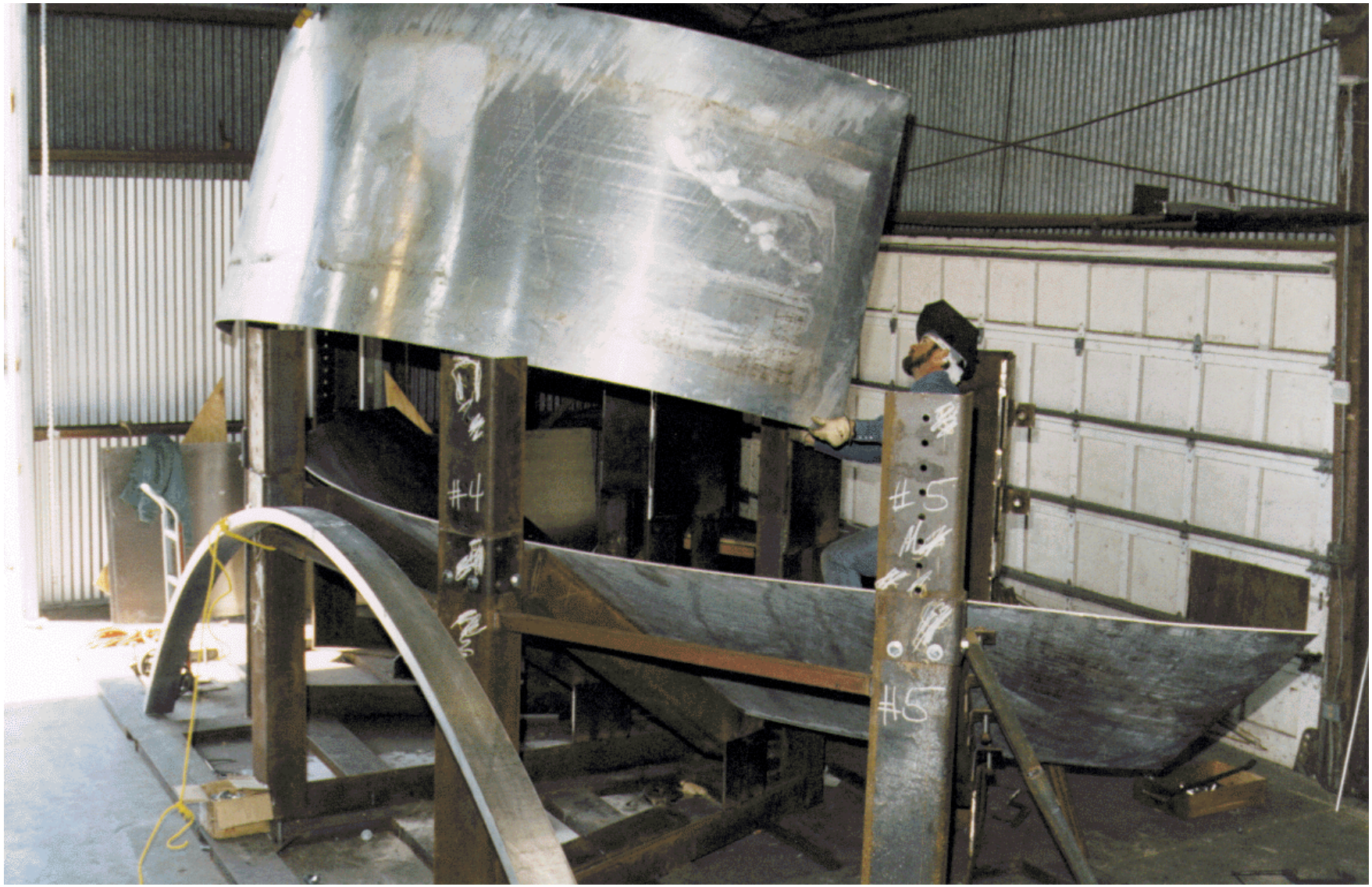

hits / 50 events
Coverage of New PMT Array
Z = −30 cm
Original Mirror
18 cm Shorter Mirror
z−index of PMT
IZ of PMT

Supermodule Assembly at SUNY





Vessel Fabrication at FSU



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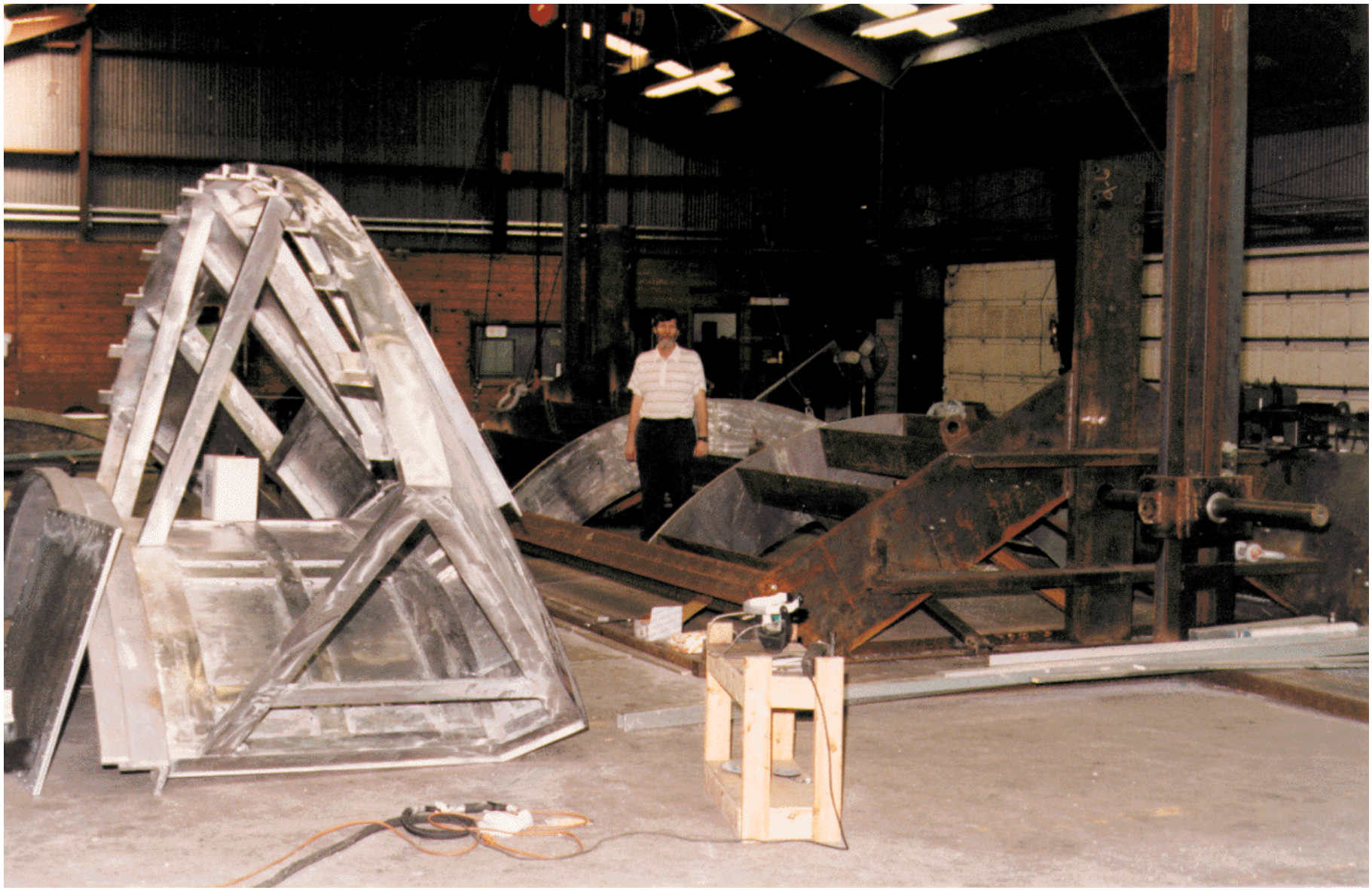
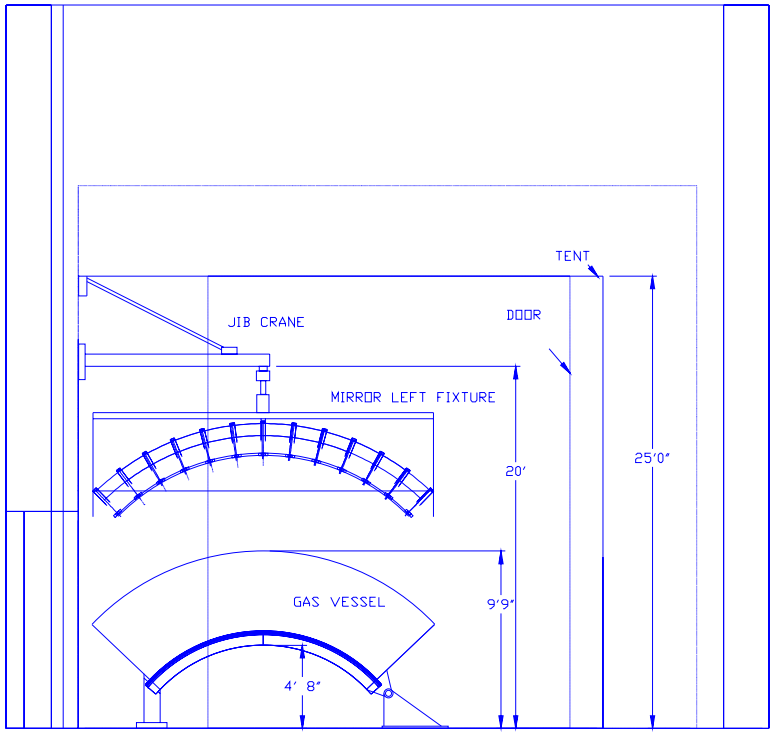
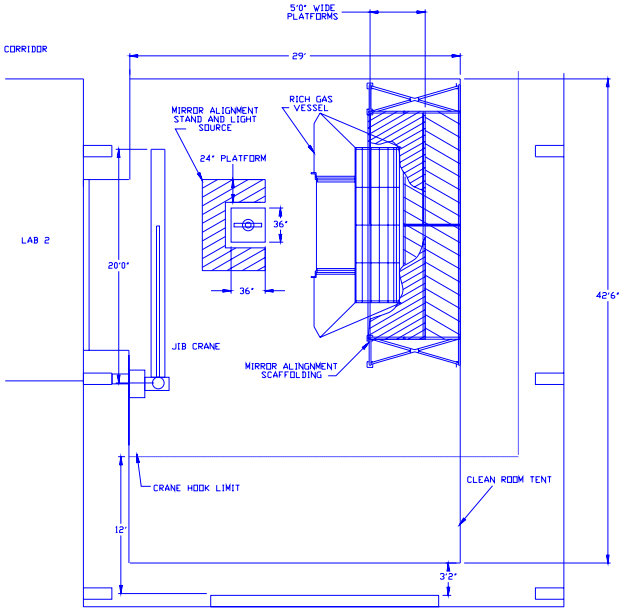
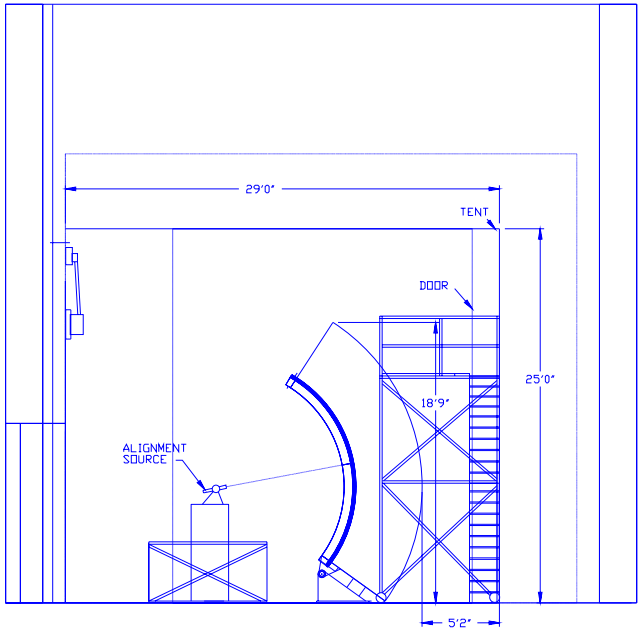


RICH Assembly at Bldg. 832



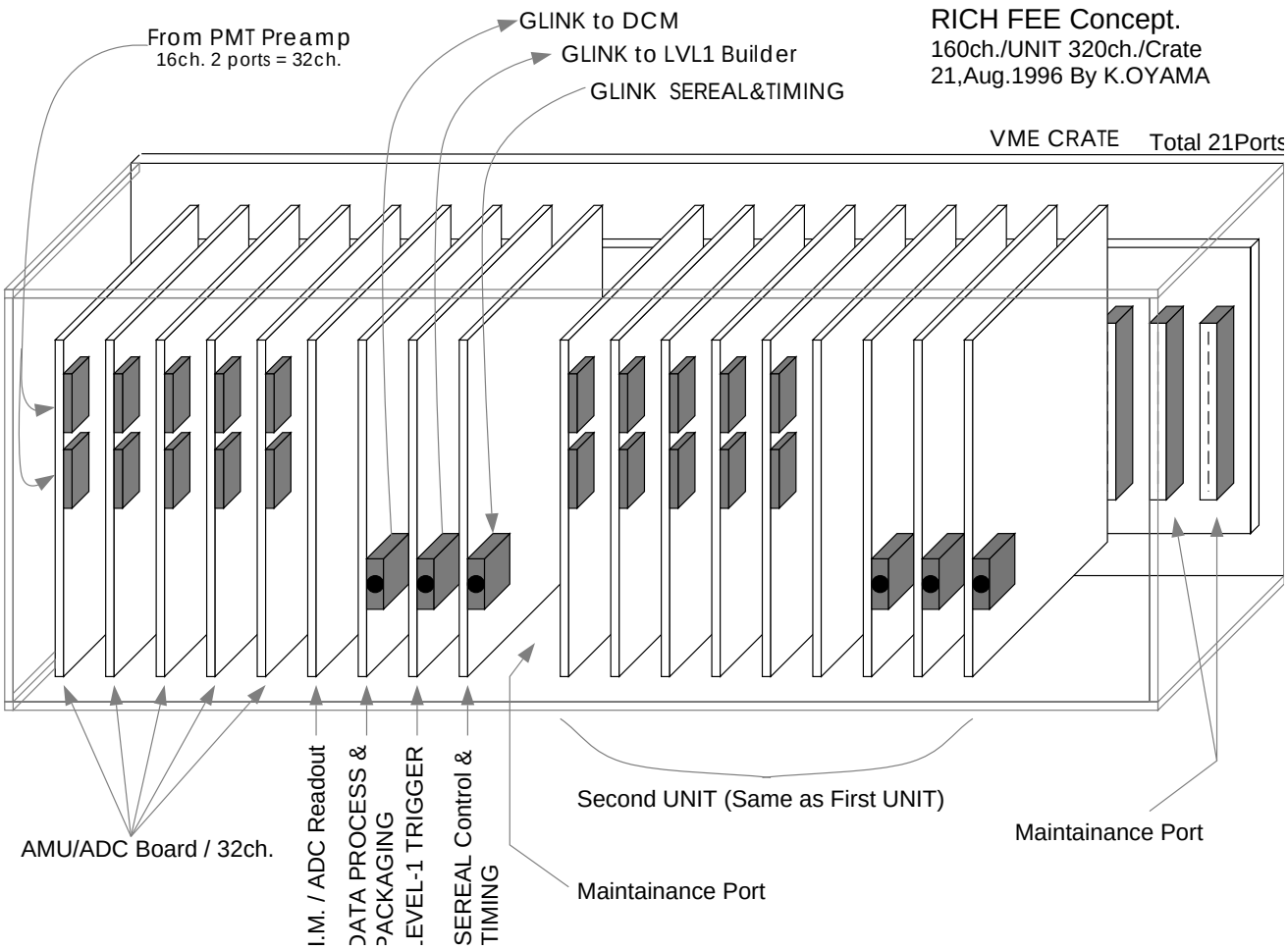




FEE

FEE specifications fixed

Schematics of RICH FEE made and being improved



FEE Integrator Chip (8CH, analog + TAC)

prototype (1) designed , made and being tested

Schedule/Milestones This Year

Vessels	
Complete vessel−1 fabrication	June 1997
Vessel−2	Oct. 1997
Mirrors	
Complete 48 miror segments (for arm−1)	Sep. 1997
Complete mirror support structure	July 1997
Supermodules	
Place order of 830 PMT's (~800 left)	June 1997
Complete 80 supermodules (for arm−1)	Aug. 1997
RICH Arm−1 Assembly	
Start supermodule installation	July 1997
Complete mirror assembly and alignment	Jan. 1998
RICH arm−1 ready for installation	**April 1,1998**
RICH FEE	
FEM backplane design	June 1997
Trigger sum circuit prototype	June 1997
Integrator chip prototype test	Summer, 1997
Start design of integrator/AMU board	Fall, 1997
Complete pre−amp	Dec. 1997

Key Issues & Concerns

US/Japan budget is very tight in JFY97

- Yen−dollar exchange rate
- Share of 1 M$ reduction of total budget

Vessel/mirror needs ~300 K$ extra (~25% contingency limit)

- Compensation with partial deferral of payment for PMT's
  - = all PMT's will be delivered to us in JFY97

Partial deferral of FEM fabrication

- No impact so far for the installtion of RICH arms

Gas−handling scheme & final safety review(s)

- a series of reviews will be planned
  - with the first one in the end of May